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<110>   Falco, S. Carl
         Famodu, Layo O.
         Orozco, Buddy
         Schwaber, James S.

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<151>   July 21, 1998

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Phe Asn Arg Lys Arg Leu Lys Gly Glu Asn Gly Leu Asp Asp Thr Leu
        35   40   45

His Ala Leu Asn Thr Leu Phe Glu Val Leu Phe Thr Leu Cys Arg Gly
    50   55   60

Leu Ala Pro Phe Thr Pro Phe Leu Thr Asp Asn Ile Tyr Leu Lys Leu
65   70   75   80

Leu Pro His Ile Pro Lys Glu Leu Gln Ser Ala Asp Pro Arg Ser Val
                85   90   95

1

His Phe Leu Pro Phe Pro Asp Val Arg Glu Glu Leu Phe Asp Glu Glu
        100   105   110

Val Glu Arg Arg Val Gly Arg Met Gln Arg Val Ile Glu Leu Ala Arg
        115   120   125

Val Ser Arg Glu Arg Arg Ala Ile Gly Leu Lys Gln Pro Leu Lys Thr
        130   135   140

Leu Val Val Ile His Ser Asp Pro Gln Tyr Leu Glu Asp Val Lys Ser
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Phe Ile Phe Tyr Asp Gly Pro Pro Phe Ala Thr Gly Leu Pro His Tyr
        35   40   45

Gly His Ile Leu Ala Gly Thr Ile Lys Asp Val Val Thr Arg His Gln
      50   55   60

Ser Met Arg Gly Arg His Val Ser Arg Arg Phe Xaa Trp Asp Cys His
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            20   25   30

Asp Gly Tyr Arg Leu Tyr Thr Val Val Pro Tyr Leu Leu Lys Phe Leu
            35   40   45

Asp Asn Leu Thr Asn Ile Tyr Val Arg Phe Asn Arg Lys Arg Leu Lys
        50   55   60

Gly Arg Ser Gly Glu Glu Asp Cys Arg Ile Ala Leu Ser Thr Leu Tyr
65   70   75   80

His Val Leu Leu Leu Ser Cys Lys Val Met Ala Pro Phe Thr Pro Phe
                85   90   95

Phe Thr Glu Val Leu Tyr Gln Asn Met Arg
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Thr Ser Phe Arg Val Ile Ala Asp Asn Tyr Val Thr Asp Asp Ser Gly
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Thr Gly Val Val His Cys Ala Pro Ala Phe Gly Glu Asp Asp His Arg
            20   25   30

Val Cys Leu Ser Ala Gly Ile Ile Glu Ala Ser Gly Leu Val Val Ala
            35   40   45

Val Asp Asp Asp Gly His Phe Ile Glu Lys Ile Ser Gln Phe Lys Gly
        50   55   60

Arg His Val Lys Glu Ala Asp Lys Asp Ile Ile Asn Ala Val Lys Asp
65   70   75   80

4

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Lys Gly Arg Leu Val Ser Lys Gly Ser Ile Glu His Ser Tyr Pro Tyr
            85                  90                  95

Cys Trp Arg Ser Gly Thr Pro Leu Ile Tyr Arg Ala Val Pro Ser Trp
            100                 105                 110

Phe Ile Lys Val Glu Lys Ile Arg Asp Gln Leu Leu Glu Cys Asn Lys
            115                 120                 125

Glu Thr Tyr Trp Val Pro Asp Tyr Val Lys Glu Lys Arg Phe His Asn
            130                 135                 140

Trp Leu Glu Gly Ala Arg Asp Trp Ala Val Ser Arg Ser Arg Phe Trp
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<213>    Zea mays

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<213> Zea mays

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Gly Leu Glu Glu Lys Leu Ala Gly Leu Ser Thr Gly Gly Asp Gly Gln
        35   40   45

Asn Pro Pro Pro Ala Gly Glu Gly Gly Glu Glu Pro Gln Leu Ser Lys
        50   55   60

Asn Ala Lys Lys Arg Glu Glu Lys Arg Lys Leu Glu Glu Glu Arg
65   70   75   80

Arg Leu Lys Glu Glu Glu Lys Lys Asn Lys Ala Ala Ala Ala Ser Gly
                85   90   95

Lys Pro Gln Lys Ala Ser Ala Ala Asp Asp Asp Asp Met Asp Pro Thr
            100   105   110

Gln Tyr Tyr Glu Asn Arg Leu Lys Ala Leu Asp Ser Leu Lys Ala Thr
        115   120   125

Gly Val Asn Pro Tyr Pro His Lys Phe Pro Val Gly Ile Ser Val Pro
        130   135   140

Glu Tyr Ile Glu Lys Tyr Arg Thr Leu Ser Glu Gly Glu Lys Leu Thr
145   150   155   160

Asp Val Ala Glu Cys Leu Ala Gly Arg Ile Met Asn Lys Arg Thr Ser
                165   170   175

Ser Ser Lys Leu Phe Phe Tyr Asp Leu Tyr Gly Gly Gly Met Lys Val
            180   185   190

Gln Val Met Ala Asp Ala Arg Thr Ser Glu Leu Asp Glu Ala Glu Phe
        195   200   205

Ser Lys Tyr His Ser Gly Val Lys Arg Gly Asp Ile Val Gly Ile Cys
    210   215   220

Gly Tyr Pro Gly Lys Ser Asn Arg Gly Glu Leu Ser Val Phe Pro Lys
225   230   235   240

Arg Phe Val Val Leu Ser Pro Cys Leu His Met Met Pro Arg Gln Lys
                245   250   255

Gly Glu Gly Ser Ala Val Pro Val Pro Trp Thr Pro Gly Met Gly Arg
            260   265   270

6

Asn Ile Glu Asn Tyr Val Leu Arg Asp Gln Glu Thr Arg Tyr Arg Gln
     275   280   285

Arg Tyr Leu Asp Leu Met Val Asn His Glu Val Arg His Ile Phe Lys
     290   295   300

Thr Arg Ser Lys Ile Val Ser Phe Ile Arg Lys Phe Leu Asp Asp Arg
305   310   315   320

Glu Phe Leu Glu Val Glu Thr Pro Met Met Asn Met Ile Ala Gly Gly
            325   330   335

Ala Ala Ala Arg Pro Phe Val Thr His His Asn Glu Leu Asn Met Arg
            340   345   350

Leu Phe Met Arg Ile Ala Pro Glu Leu Tyr Leu Lys Glu Leu Val Val
            355   360   365

Gly Gly Leu Asp Arg Val Tyr Glu Ile Gly Lys Gln Phe Arg Asn Glu
        370   375   380

Gly Ile Asp Leu Thr His Asn Pro Glu Phe Thr Thr Cys Glu Phe Tyr
385   390   395   400

Met Ala Tyr Ala Asp Tyr Asn Asp Leu Met Glu Leu Thr Glu Thr Met
            405   410   415

Leu Ser Gly Met Val Lys Asp Leu Thr Gly Gly Tyr Lys Ile Lys Tyr
            420   425   430

His Ala Asn Gly Val Thr Asn Pro Pro Ile Glu Ile Asp Phe Thr Pro
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Pro Phe Arg Arg Ile Asp Met Ile Lys Asp Leu Glu Ala Met Ala Asn
        450   455   460

Leu Ser Ile Pro Lys Asp Leu Ser Ser Asp Glu Ala Asn Arg Tyr Leu
465   470   475   480

Ile Glu Ala Cys Val Lys Tyr Asp Val Lys Cys Pro Pro Pro Gln Thr
            485   490   495

Thr Ser Arg Leu Leu Asp Lys Leu Val Gly His Phe Leu Glu Glu Thr
            500   505   510

Cys Val Asn Pro Thr Phe Ile Ile Asn His Pro Glu Ile Met Ser Pro
            515   520   525

Leu Ala Lys Trp His Arg Ser Arg Pro Gly Leu Thr Glu Arg Phe Glu
        530   535   540

Leu Phe Val Asn Lys His Glu Val Cys Asn Ala Tyr Thr Glu Leu Asn
545   550   555   560

Asp Pro Val Val Gln Arg Gln Arg Phe Glu Glu Gln Leu Lys Asp Arg
            565   570   575

Gln Ser Gly Asp Asp Glu Ala Met Ala Leu Asp Glu Thr Phe Cys Thr
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Asp Arg Leu Thr Met Leu Leu Thr Asp Ser Gln Asn Ile Lys Glu Val
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Leu Leu Phe Pro Ala Met Lys Pro Gln Glu
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<213> Oryza sativa

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Leu Tyr Met Arg Ile Ala Pro Glu Leu Tyr Leu Lys Glu Leu Val Val
        35   40   45

Gly Gly Leu Asp Arg Val Tyr Glu Ile Gly Lys Gln Phe Arg Asn Glu
    50   55   60

Gly Ile Asp Leu Thr His Asn Pro Glu Phe Thr Thr Cys Glu Phe Tyr
65   70   75   80

Met Ala Tyr Ala Asp Tyr Asn Asp Leu Ile Glu Leu Thr Glu Thr Met
                85   90   95

Leu Ser Gly Met Val Lys Glu Leu Thr Gly Gly Tyr Lys Ile Lys Tyr
            100   105   110

His Ala Asn Gly Val Glu Lys Pro Leu Asp Lys Leu Val
        115   120   125

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9

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Lys Asn Lys Gln Lys Glu Glu Glu Arg Lys Arg Lys Glu Glu Asp Lys
         35                  40                  45

Ala Lys Lys Ala Ala Glu Met Gln Lys Ala Lys Asp Asn Lys Ser Ala
     50                  55                  60

Pro Ala Asp Glu Asp Asp Met Asp Pro Thr Gln Tyr Leu Glu Asn Arg
 65                  70                  75                  80

Leu Lys Tyr Leu Ala Val Gln Lys Ala Glu Gly Asn Asn Pro Tyr Pro
                 85                  90                  95

His Lys Phe Phe Val Thr Met Ser Leu Asp Gln Tyr Ile Lys Glu Tyr
                100                 105                 110

Gly Gly Leu Ser Asn Gly Gln His Leu Glu Asp Val Ser Val Ser Met
            115                 120                 125

Ala Gly Arg Ile Met His Lys Arg Thr Ser Gly Ser Lys Leu Val Phe
        130                 135                 140

Tyr Asp Leu His Ser Gly Gly Phe Lys Val Gln Val Met Ala Asp Ala
145                 150                 155                 160

Ser Lys Ser Asp Leu Asp Glu Ala Glu Phe Ser Lys Phe His Ser Asn
                165                 170                 175

Val Lys Arg Gly Asp Ile Val Gly Ile Thr Gly Phe Pro Gly Lys Ser
            180                 185                 190
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10

Lys Lys Gly Glu Leu Ser Ile Phe Pro Lys Thr Phe Val Leu Leu Ser
            195   200   205

His Cys Leu His Met Met Pro Arg Gln Lys Ser Ala Ala Ala Ala Asp
            210   215   220

Asn Ala Asn Leu Lys Lys Asn Pro Trp Val Pro Gly Ser Thr Arg Asn
225   230   235   240

Pro Glu Thr Tyr Ile Leu Lys Asp Gln Glu Thr Arg Tyr Arg Arg His
                245   250   255

Leu Asp Leu Met Leu Asn Pro Glu Val Arg Glu Ile Phe Lys Thr Arg
                260   265   270

Ser Lys Ile Ile Cys Tyr Ile Arg Arg Phe Leu Asp Asp Leu Asp Phe
            275   280   285

Leu Glu Val Glu Thr Pro Met Met Asn Met Ile Ala Gly Gly Ala Ala
            290   295   300

Ala Arg Pro Phe Val Thr His His Asn Asp Leu Asn Met Arg Leu Phe
305   310   315   320

Met Arg Ile Ala Pro Glu Leu Tyr Leu Lys Glu Leu Val Val Gly Gly
                325   330   335

Leu Asp Arg Val Tyr Glu Ile Gly Lys Gln Phe Arg Asn Glu Gly Ile
                340   345   350

Asp Leu Thr His Asn Pro Glu Phe Thr Thr Cys Glu Phe Tyr Met Ala
                355   360   365

Tyr Lys Asp Tyr Asn Asp Leu Met Asp Ile Thr Glu Gln Met Leu Ser
                370   375   380

Gly Met Val Lys Glu Leu Thr Xaa Xaa Xaa Tyr Lys Ile Lys Tyr His
385   390   395   400

Ala Asp Gly Ile Asp Lys Glu Pro Ile Glu Ile Asp Phe Thr Pro Pro
                405   410   415

Phe Arg Arg Ile Asp Met Ile Asp Glu Leu Glu Lys Val Ala Gly Leu
                420   425   430

Ser Ile Pro Lys Asp Leu Ser Ser Glu Glu Ala Asn Gln Tyr Leu Lys
                435   440   445

Asp Thr Cys Leu Lys Tyr Glu Ile Lys Cys Pro Pro Pro Glu Thr Thr
            450   455   460

Ala Arg Leu Leu Asp Lys Leu Val Gly His Phe Leu Glu Glu Thr Cys
465   470   475   480

Val Asn Pro Thr Phe Ile Ile Asn His Pro Glu Ile Met Ser Pro Leu
                485   490   495

Ala Lys Trp His Arg Ser Lys Arg Gly Leu Thr Glu Arg Phe Glu Leu
            500   505   510

11

Phe Val Asn Lys His Glu Leu Cys Asn Ala Tyr Thr Glu Leu Asn Asp
515   520   525

Pro Val Val Gln Arg Gln Arg Phe Ala Glu Gln Leu Lys Asp Arg Gln
    530   535   540

Ser Gly Asp Asp Glu Ala Met Ala Phe Asp Glu Thr Phe Cys Thr Ala
545   550   555   560

Leu Glu Tyr Gly Leu Pro Pro Thr Gly Gly Trp Gly Leu Gly Ile Asp
                565   570   575

Arg Leu Thr Met Leu Leu Thr Asp Ser Gln Asn Ile Lys Glu Val Leu
        580   585   590

Leu Phe Pro Ala Met Lys Pro
        595

<210>   15
<211>   702
<212>   DNA
<213>   Triticum aestivum

<400>   15
gcacgaggct tgacaagcta gtgggccatt tcttggagga aacatgtgtg aacccaacat   60
ttattatcaa ccacccagag ataatgagtc cattggcaaa gtggcatagg tcccgacctg 120
ggttgacaga aaggtttgag ctctttgtta acaaacacga ggtgtgcaat gcctacactg 180
agttgaacga tcctgttgtg caaaggcaac ggtttgagga acaactaaag gatcgtcaat 240
ctggtgatga tgaagctatg gctttggacg aaacattctg cactgccctc gagtatgggc 300
tgcctccgac aggtggttgg ggtttgggaa ttgatcgcct tacaatgatg ctgacagatt 360
cccagaacat caaggaagtt ctcttgttcc cggccatgaa gccccaagag tagctgtttg 420
caagcccatc aacagagtaa ttttgttttg ctgcgctgag gttggaggat tatgacatgt 480
gacaatacaa cgagttttaa ctgtgccgga caaacatgt gtagcagcac tggaggtaca 540
agctactttt gcgtggaagg gttgttgaaa atttgaactc cggttaggag gaagagtgag 600
gcatatgaag caagaatcag aaggagacag tgtgctacat gtttgcttgt tttctttttg 660
gaagatcaaa atttagtgct tggtattgtt atacactttt tt   702

<210>   16
<211>   136
<212>   PRT
<213>   Triticum aestivum

<400>   16
Thr Arg Leu Asp Lys Leu Val Gly His Phe Leu Glu Glu Thr Cys Val
1   5   10   15

Asn Pro Thr Phe Ile Ile Asn His Pro Glu Ile Met Ser Pro Leu Ala
                20   25   30

Lys Trp His Arg Ser Arg Pro Gly Leu Thr Glu Arg Phe Glu Leu Phe
        35   40   45

Val Asn Lys His Glu Val Cys Asn Ala Tyr Thr Glu Leu Asn Asp Pro
    50   55   60

Val Val Gln Arg Gln Arg Phe Glu Glu Gln Leu Lys Asp Arg Gln Ser
65   70   75   80

Gly Asp Asp Glu Ala Met Ala Leu Asp Glu Thr Phe Cys Thr Ala Leu
                85   90   95

12

Glu Tyr Gly Leu Pro Pro Thr Gly Gly Trp Gly Leu Gly Ile Asp Arg
            100   105   110

Leu Thr Met Met Leu Thr Asp Ser Gln Asn Ile Lys Glu Val Leu Leu
            115   120   125

Phe Pro Ala Met Lys Pro Gln Glu
            130   135

<210> 17
<211> 1430
<212> DNA
<213> Zea mays

<400> 17
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gcgctctccc ccgccgccat ttcccccttc accaccctcc ccctctacta ttcttcgcgt   120
cctcaccgcc gcctcctcgc ccgcttcttc tccgtcgctt cggcaccggg cggagcgaaa   180
gggcaccgac cggcggcctc cgccgttgag gtgggcggcg tcaagatcgc gcgcgaggat   240
gttgtgaagg aggatgatcc gacaaacaac gtgccgaca atatcttttc gaagatcggc   300
ctgcagctgc acaggaggga taaccatcc cttggattt tgaagaacac aatttatgat   360
tactttgaca agaacttcac tgggcagttt gacaagtttg atgacctttg ccctcttgtt   420
tctgtcaagc agaattttga tgatgtcttg gtcccttctg accatgtaag ccggagttac   480
aacgacacat attatgttga tggtcaaaca gtcttaaggt gtcataccag tgctcatcaa   540
gctgagctgc taaggcatgg acatacacac tttcttgtaa ctggagatgt ttaccgtagg   600
gattccattg attcaactca ctatcctgtc ttccatcaga tggaagggtt ccgtgtcttc   660
tctcctgatg aatggtcagg gtctcgcatg ggtgggacag catatgcagc tgcagaactc   720
aagaaaacac tggaaggctt ggcaagacat ctatttggtg ctgtagagat gcgatgggtt   780
gacacttact tcccatttac caacccatcc tttgagctcg aaatatactt tcaggatgat   840
tggttggagg ttttgggggtg tggagtcacc gagcaggaaa ttttgaaaag aaatggcagg   900
agggaccatg tggcatgggc ctttggattg ggcttggagc gccttgcaat ggtccttttc   960
gacattccag atattcgact attctggtcg aatgataaac ggttcacgtc ccagttctca 1020
gaaggcaagc ttggtgtcaa gttcaagcca ttttcaaagt ttcctccttg ttacaaggat 1080
atgagtttct ggatcaatga tgcatttaca gaaaacaact tatgtgaggt tgtcagagga 1140
attgctggtg atcttgttga ggaggtaaaa cttattgata atttcacgaa caagaaaggc 1200
atgacgagcc attgctatag aatagcctat aggtcgatgg aacgctcgct cacagacgag 1260
gagattaaca atcttcagtt gaatgtcagg gaagctgtga aagataaatt ggaagtagag 1320
ttgagataga agcagctagc tatgcagtta taccatgaac taaattttgc ctctctttat 1380
atgtaaatcc atttaaaatg attttttttgt atctatcaag aaaatgcacc   1430

<210> 18
<211> 442
<212> PRT
<213> Zea mays

<400> 18
Arg Thr Ala Arg Cys Trp Leu Leu Arg Ala Arg Val Arg Gly Met Ala
  1   5   10   15

Thr Leu Pro Met Ala Leu Ser Pro Ala Ala Ile Ser Pro Phe Thr Thr
            20   25   30

Leu Pro Leu Tyr Tyr Ser Ser Arg Pro His Arg Arg Leu Leu Ala Arg
            35   40   45

Phe Phe Ser Val Ala Ser Ala Pro Gly Gly Ala Lys Gly His Arg Pro
            50   55   60

13

```
Ala Ala Ser Ala Val Glu Val Gly Gly Val Lys Ile Ala Arg Glu Asp
65                  70                  75                      80

Val Val Lys Glu Asp Asp Pro Thr Asn Asn Val Pro Asp Asn Ile Phe
                85              90                      95

Ser Lys Ile Gly Leu Gln Leu His Arg Arg Asp Asn His Pro Leu Gly
            100             105             110

Ile Leu Lys Asn Thr Ile Tyr Asp Tyr Phe Asp Lys Asn Phe Thr Gly
        115             120             125

Gln Phe Asp Lys Phe Asp Asp Leu Cys Pro Leu Val Ser Val Lys Gln
    130             135             140

Asn Phe Asp Asp Val Leu Val Pro Ser Asp His Val Ser Arg Ser Tyr
145             150             155             160

Asn Asp Thr Tyr Tyr Val Asp Gly Gln Thr Val Leu Arg Cys His Thr
            165             170             175

Ser Ala His Gln Ala Glu Leu Leu Arg His Gly His Thr His Phe Leu
            180             185             190

Val Thr Gly Asp Val Tyr Arg Arg Asp Ser Ile Asp Ser Thr His Tyr
            195             200             205

Pro Val Phe His Gln Met Glu Gly Phe Arg Val Phe Ser Pro Asp Glu
    210             215             220

Trp Ser Gly Ser Arg Met Gly Gly Thr Ala Tyr Ala Ala Ala Glu Leu
225             230             235             240

Lys Lys Thr Leu Glu Gly Leu Ala Arg His Leu Phe Gly Ala Val Glu
            245             250             255

Met Arg Trp Val Asp Thr Tyr Phe Pro Phe Thr Asn Pro Ser Phe Glu
            260             265             270

Leu Glu Ile Tyr Phe Gln Asp Asp Trp Leu Glu Val Leu Gly Cys Gly
            275             280             285

Val Thr Glu Gln Glu Ile Leu Lys Arg Asn Gly Arg Arg Asp His Val
290             295             300

Ala Trp Ala Phe Gly Leu Gly Leu Glu Arg Leu Ala Met Val Leu Phe
305             310             315             320

Asp Ile Pro Asp Ile Arg Leu Phe Trp Ser Asn Asp Lys Arg Phe Thr
            325             330             335

Ser Gln Phe Ser Glu Gly Lys Leu Gly Val Lys Phe Lys Pro Phe Ser
            340             345             350

Lys Phe Pro Pro Cys Tyr Lys Asp Met Ser Phe Trp Ile Asn Asp Ala
            355             360             365

Phe Thr Glu Asn Asn Leu Cys Glu Val Val Arg Gly Ile Ala Gly Asp
            370             375             380
```

14

```
Leu Val Glu Glu Val Lys Leu Ile Asp Asn Phe Thr Asn Lys Lys Gly
385                 390                 395                 400

Met Thr Ser His Cys Tyr Arg Ile Ala Tyr Arg Ser Met Glu Arg Ser
                405                 410                 415

Leu Thr Asp Glu Glu Ile Asn Asn Leu Gln Leu Asn Val Arg Glu Ala
                420                 425                 430

Val Lys Asp Lys Leu Glu Val Glu Leu Arg
            435                 440


<210>  19
<211>  1000
<212>  DNA
<213>  Oryza sativa

<400>  19
gcacgagtgg taccaacagc atcctgctcg ggattcacac gatacatttt ttcttgaagc    60
ccctgccgct acaaaacaat tgcctgaaga ttatcttgag aaagtaaagg aagttcatca   120
acgtggtggt tatggctcca agggatatgg ctatgactgg aaacgggatg aagcagagaa   180
aaacctgctt cgtacccaca ctacagcagt ttcaacaagg atgctataca agctagcaca   240
ajagaaacct tttgcccata gaggtacta ctccattgat cgtgttttcc gcaatgaagc   300
tgtggaccgg actcatcttg cggaattcca ccagattgaa ggtctcattt gtgattatgg   360
tttgacgctg ggtgatctga ttggtgtatt ggaggatttc ttctcgagtc taggcatgtc   420
aaagctgcgt ttcaagcctg cctacaatcc atacaccgag ccgagcatgg aaattttcag   480
ttaccatgaa ggrttgaaga aatgggtgga agttggtaac tctggcatgt tcagacctga   540
aatgttactt cccatgggac tgccagaggg tgttaatgtt attgcatggg gtctttcact   600
agaaaggcca acaatgattc tttacggcat cgacaacatt cgagacctct ttggaccaaa   660
ggttgatttc aacctcatca agagcaacc tctctgccgc ttgggactgc agtaaaacct   720
tgcaaaagtt ggttggaagt gattaagtaa caagatttgt ttagttgatc agtggttgaa   780
cgtgaagaga tcatttctgg cttaccttga aacaccaata catgtgcatt tagcagaggt   840
ttttgtatta cagttttgag tgatatgaga ctaccagcca atttttgtgt gtgtccatat   900
tcgaatactt tgatacattt taattgagca catccaatgt atgaagtggt catctgccgc   960
tgcggttgct tgaatcaaaa aaaaaaaaaa aaaaaaaaaa                         1000


<210>  20
<211>  237
<212>  PRT
<213>  Oryza sativa

<400>  20
His Glu Trp Tyr Gln Gln His Pro Ala Arg Asp Ser His Asp Thr Phe
1                 5                   10                  15

Phe Leu Glu Ala Pro Ala Ala Thr Lys Gln Leu Pro Glu Asp Tyr Leu
                20                  25                  30

Glu Lys Val Lys Glu Val His Gln Arg Gly Gly Tyr Gly Ser Lys Gly
            35                  40                  45

Tyr Gly Tyr Asp Trp Lys Arg Asp Glu Ala Glu Lys Asn Leu Leu Arg
        50                  55                  60

Thr His Thr Thr Ala Val Ser Thr Arg Met Leu Tyr Lys Leu Ala Gln
    65                  70                  75                  80

Glu Lys Pro Phe Ala Pro Lys Arg Tyr Tyr Ser Ile Asp Arg Val Phe
                85                  90                  95
```

15

Arg Asn Glu Ala Val Asp Arg Thr His Leu Ala Glu Phe His Gln Ile
                100   105   110

Glu Gly Leu Ile Cys Asp Tyr Gly Leu Thr Leu Gly Asp Leu Ile Gly
                115   120   125

Val Leu Glu Asp Phe Phe Ser Ser Leu Gly Met Ser Lys Leu Arg Phe
        130   135   140

Lys Pro Ala Tyr Asn Pro Tyr Thr Glu Pro Ser Met Glu Ile Phe Ser
145   150   155   160

Tyr His Glu Gly Leu Lys Lys Trp Val Glu Val Gly Asn Ser Gly Met
                165   170   175

Phe Arg Pro Glu Met Leu Leu Pro Met Gly Leu Pro Glu Gly Val Asn
                180   185   190

Val Ile Ala Trp Gly Leu Ser Leu Glu Arg Pro Thr Met Ile Leu Tyr
        195   200   205

Gly Ile Asp Asn Ile Arg Asp Leu Phe Gly Pro Lys Val Asp Phe Asn
        210   215   220

Leu Ile Lys Ser Asn Pro Leu Cys Arg Leu Gly Leu Gln
225   230   235

<210> 21
<211> 387
<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (337)

<220>
<221> unsure
<222> (379)

<400> 21
gattgccaat ggatcatgga aagaaaaatc attcaaatct ttgaatttag gaaaaggagt 60
catggtgtc cctccaaatg gtggccatct tcacacttta cttaaatgca gaactatgat 120
gaaagaaatc ttcttggaaa tgggatttga agaaatgcca accaacaatt acgttgaatc 180
ttctttctgg aattttgata ctttatttca acctcaacaa catcctgctc gtgatgctca 240
cgatactttc ttcctttctg aacctgcatc tgccaaatcc attccacaag attatttaga 300
aagagtgaaa acaatgcatg agaaaggagg gcacggntct attggttgga gatacgactg 360
                                                                 387
gagtggaaac tgagtccana aaaaaaa

<210> 22
<211> 123
<212> PRT
<213> Glycine max

<400> 22
Ile Ala Asn Gly Ser Trp Lys Glu Lys Ser Phe Lys Ser Leu Asn Leu
  1   5   10   15

Gly Lys Gly Val Met Gly Val Pro Pro Asn Gly Gly His Leu His Thr
                20   25   30

16

Leu Leu Lys Cys Arg Thr Met Met Lys Glu Ile Phe Leu Glu Met Gly
     35   40   45

Phe Glu Glu Met Pro Thr Asn Asn Tyr Val Glu Ser Ser Phe Trp Asn
    50   55   60

Phe Asp Thr Leu Phe Gln Pro Gln Gln His Pro Ala Arg Asp Ala His
65   70   75   80

Asp Thr Phe Phe Leu Ser Glu Pro Ala Ser Ala Lys Ser Ile Pro Gln
          85   90   95

Asp Tyr Leu Glu Arg Val Lys Thr Met His Glu Lys Gly Gly His Gly
      100   105   110

Ser Ile Gly Trp Arg Tyr Asp Trp Ser Gly Asn
     115   120

<210> 23
<211> 1074
<212> DNA
<213> Triticum aestivum

<400> 23
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gcacgaggga caacctattg cgataggata tagccaaccg ttgttagagg tccgtgaggc   60
aatccagaac attttttctcg agatggggtt cagtgagatg ccaacgaaca tgtatgtaga  120
gagcagcttc tggaattttg atgcactgtt ccagccacaa cagcatcctg ctcgtgattc  180
atacgatacc tttttcctca aagcccctgc tacaacaaca caattacctg atgactatct  240
tgagaaagta aagcaagtac atcagtctgg tggtcatggc tccaaaggat atggttacga  300
ttggaagcga gatgaagcag agaaaaacct gcttcgtact cacacaactg cagtttcaac  360
aaggatgcta tacaagctag cacaggagaa aacttttgct cctaagagat actattctat  420
tgatcgtgtt ttccggaatg aagctgtgga gcttggtgat ctgataggtg tattggagga  480
agaaggtctt atttgtgatt atggtttgac gcttggtgat ctgataggtg tattggagga  540
tttcttctcc agactaggca tgtcaaagct gcgtttcaaa cctgcctaca acccgtacac  600
tgaaccaagc atggaaattt tcagctacca cgatggtctg aagaaatggg tggaaatagg  660
caactcaggc atgttcaggc cggaaatgtt acttcccatg ggactgccag agggtgttaa  720
tgttatcgca tggggtcttt cgcttgaaag gccaacaatg attctgtatg ggattgacaa  780
catacgtgat ctctttgggc caaaggtcga cttcaatctg atcaagagca gcccgatttg  840
ccgcttgggg ctgtagtgtg gtgagcttga tagaacttta tctggatgtc tggatgcgaa  900
ggatgtttat ttgtggttat acctttgaaa accagtactt gtgcatttaa cagagggagt  960
gcagaaatac acacatgtag ctctgaattg caaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020
aataaaaaaa aaacaaaaaa aaaaaaaaaa tactcgaggg ggggccgtac caca        1074
```

<210> 24
<211> 284
<212> PRT
<213> Triticum aestivum

<400> 24
His Glu Gly Gln Pro Ile Ala Ile Gly Tyr Ser Gln Pro Leu Leu Glu
1   5   10   15

Val Arg Glu Ala Ile Gln Asn Ile Phe Leu Glu Met Gly Phe Ser Glu
         20   25   30

Met Pro Thr Asn Met Tyr Val Glu Ser Ser Phe Trp Asn Phe Asp Ala
    35   40   45

17

```
Leu Phe Gln Pro Gln Gln His Pro Ala Arg Asp Ser His Asp Thr Phe
    50                  55                  60
```

```
Phe Leu Lys Ala Pro Ala Thr Thr Thr Gln Leu Pro Asp Asp Tyr Leu
65                  70                  75                  80
```

```
Glu Lys Val Lys Gln Val His Gln Ser Gly Gly His Gly Ser Lys Gly
                85                  90                  95
```

```
Tyr Gly Tyr Asp Trp Lys Arg Asp Glu Ala Glu Lys Asn Leu Leu Arg
            100                 105                 110
```

```
Thr His Thr Thr Ala Val Ser Thr Arg Met Leu Tyr Lys Leu Ala Gln
            115                 120                 125
```

```
Glu Lys Thr Phe Ala Pro Lys Arg Tyr Tyr Ser Ile Asp Arg Val Phe
    130                 135                 140
```

```
Arg Asn Glu Ala Val Asp Arg Thr His Leu Ala Glu Phe His Gln Ile
145                 150                 155                 160
```

```
Glu Gly Leu Ile Cys Asp Tyr Gly Leu Thr Leu Gly Asp Leu Ile Gly
                165                 170                 175
```

```
Val Leu Glu Asp Phe Phe Ser Arg Leu Gly Met Ser Lys Leu Arg Phe
            180                 185                 190
```

```
Lys Pro Ala Tyr Asn Pro Tyr Thr Glu Pro Ser Met Glu Ile Phe Ser
            195                 200                 205
```

```
Tyr His Asp Gly Leu Lys Lys Trp Val Glu Ile Gly Asn Ser Gly Met
    210                 215                 220
```

```
Phe Arg Pro Glu Met Leu Leu Pro Met Gly Leu Pro Glu Gly Val Asn
225                 230                 235                 240
```

```
Val Ile Ala Trp Gly Leu Ser Leu Glu Arg Pro Thr Met Ile Leu Tyr
                245                 250                 255
```

```
Gly Ile Asp Asn Ile Arg Asp Leu Phe Gly Pro Lys Val Asp Phe Asn
            260                 265                 270
```

```
Leu Ile Lys Ser Ser Pro Ile Cys Arg Leu Gly Leu
            275                 280
```

<210> 25
<211> 1939
<212> DNA
<213> Zea mays

<400> 25
gtccggaatt cccgggtcga cccacgcgtc cgtgctgtcc cattggcaac ttgcgcgcta   60
ctctgactcg agtggccgct actctacccc acccacaccc ttccgcccgc cgccactaaa   120
ccctagcggg acaccggcct tgctcgcgcc gcctcatcct ctcactcctc tcggaccccc   180
ggtggccggt gcagagctgc gcgaccgaga accgaatctg tgagccatgt cgaccaacaa   240
gggcagcgcg gccaagggcg gcggaggaa gaagaaggag gtgaagaagg agacgaagct   300
cgggatggcc tataagaagg acgacaactt cggggagtgg tactccgagg ttgttgttaa   360
cagtgaaatg attgagtact atgacatttc tggttgttat atattgaggc catgggcgat   420
ggaaatctgg gagctactga aagaattctt tgatgcagaa attaaaaagc tgaagctcaa   480
accatattat ttccctttgt ttgttactga gaatgttcta cagaaggaaa aggaccacat   540

18

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tgagggcttt gcacctgagg tagcttgggt tactaaatct gggaaatctg acctggaagc  600
accgattgca atccgcccca caagtgagac tgtcatgtat ccgtacttct ccaaatggat  660
aagaagccac cgagacttac ccttgaggtg taatcaatgg tgtaatgttg ttagatggga  720
gtttagcaat ccaactcctt tcataaggag ccgtgaattt ctgtggcaag aggggcatac  780
tgcttttgcg actaaagaag aggcagatga agaggttctc caaatattgg aactgtaccg  840
aaggatatac gaagaatttt tagcagttcc agtttccaaa gggagaaaaa gcgagatgga  900
aaaatttgca ggtggccttt ataccaccag cgttgaggcc ttcattccaa acactggtcg  960
tggcatacaa ggcgcaacct cacactgtct tggtcaaaac tttgccaaga tgtttgatat 1020
cacttttgag aatgagaaag gtgttaggga aatggtttgg caaactcttt gggcctacac 1080
aacccgctcg attggagtga tggtgatgac acatggtgat gacaaaggct tagtattacc 1140
accaaaggtg gcaccaatcc aggtaatcgt gattcagtg ccttataagg acgctgacac 1200
aactgccata aaggagcct gcgaatcaac tgtttacaca ctcgatcaat ctgggattag 1260
agcggatcag gacacccgtg aaaattactc tccaggttgg aagtattccc actgggaaat 1320
gaaaggtgtt ccattgagaa ttgagattgg tccaaaagat ctggcaaaca aacaggtgcg 1380
tgttgtccgc cgggacaacg gtgcaaaggt tgacatccct gtgaccaatt ggttgaaga 1440
ggttaaagtg ttactggatg agattcaaaa aaatctgttc aaaacagccc aagaaaagag 1500
agatgcctgt gttcatgtcg tgaacacttg ggatgaattc acaactgctc tgaataacaa 1560
aaagttgatc ttggctccat ggtgtgatga ggaggaaatt gagaaagatg taaaaactcg 1620
gacaaaaggg gaacttggag ctgcgaaaac attgtgtact ccatttgagc agccagaact 1680
tccagaaggt accctgtgct ttgcatctgg aaagccagcg aagaagtggt cgttctgggg 1740
ccgcagctac tgattgcctg tgctgggatt atttctggat tcagttctag tgagttatgt 1800
agctttgaag tgtcggatac aaatccaaaa atccatttac attgcgtttt acatcgactt 1860
gcagttctca tgtcatcact gctgacaaaa gccatcgatt tcctgtggac catgctattc 1920
gagtttgaat gttgcaagg                                               1939
```

<210> 26
<211> 383
<212> PRT
<213> Zea mays

<400> 26

```
Pro Ile Ala Ile Arg Pro Thr Ser Glu Thr Val Met Tyr Pro Tyr Phe
1               5                   10                  15

Ser Lys Trp Ile Arg Ser His Arg Asp Leu Pro Leu Arg Cys Asn Gln
            20                  25                  30

Trp Cys Asn Val Val Arg Trp Glu Phe Ser Asn Pro Thr Pro Phe Ile
            35                  40                  45

Arg Ser Arg Glu Phe Leu Trp Gln Glu Gly His Thr Ala Phe Ala Thr
        50                  55                  60

Lys Glu Glu Ala Asp Glu Glu Val Leu Gln Ile Leu Glu Leu Tyr Arg
65                  70                  75                  80

Arg Ile Tyr Glu Glu Phe Leu Ala Val Pro Val Ser Lys Gly Arg Lys
                85                  90                  95

Ser Glu Met Glu Lys Phe Ala Gly Gly Leu Tyr Thr Thr Ser Val Glu
            100                 105                 110

Ala Phe Ile Pro Asn Thr Gly Arg Gly Ile Gln Gly Ala Thr Ser His
            115                 120                 125

Cys Leu Gly Gln Asn Phe Ala Lys Met Phe Asp Ile Thr Phe Glu Asn
        130                 135                 140

Glu Lys Gly Val Arg Glu Met Val Trp Gln Asn Ser Trp Ala Tyr Thr
145                 150                 155                 160
```

19

Thr Arg Ser Ile Gly Val Met Val Met Thr His Gly Asp Asp Lys Gly
165   170   175

Leu Val Leu Pro Pro Lys Val Ala Pro Ile Gln Val Ile Val Ile Ser
180   185   190

Val Pro Tyr Lys Asp Ala Asp Thr Thr Ala Ile Lys Gly Ala Cys Glu
195   200   205

Ser Thr Val Tyr Thr Leu Asp Gln Ser Gly Ile Arg Ala Asp Gln Asp
210   215   220

Thr Arg Glu Asn Tyr Ser Pro Gly Trp Lys Tyr Ser His Trp Glu Met
225   230   235   240

Lys Gly Val Pro Leu Arg Ile Glu Ile Gly Pro Lys Asp Leu Ala Asn
245   250   255

Lys Gln Val Arg Val Val Arg Arg Asp Asn Gly Ala Lys Val Asp Ile
260   265   270

Pro Val Thr Asn Leu Val Glu Glu Val Lys Val Leu Leu Asp Glu Ile
275   280   285

Gln Lys Asn Leu Phe Lys Thr Ala Gln Glu Lys Arg Asp Ala Cys Val
290   295   300

His Val Val Asn Thr Trp Asp Glu Phe Thr Thr Ala Leu Asn Asn Lys
305   310   315   320

Lys Leu Ile Leu Ala Pro Trp Cys Asp Glu Glu Glu Ile Glu Lys Asp
325   330   335

Val Lys Thr Arg Thr Lys Gly Glu Leu Gly Ala Ala Lys Thr Leu Cys
340   345   350

Thr Pro Phe Glu Gln Pro Glu Leu Pro Glu Gly Thr Leu Cys Phe Ala
355   360   365

Ser Gly Lys Pro Ala Lys Lys Trp Ser Phe Trp Gly Arg Ser Tyr
370   375   380

<210>   27
<211>   697
<212>   DNA
<213>   Glycine max

<220>
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<220>
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<222>   (40)

<220>
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<222>   (42)

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<221> unsure
<222> (694)

<400> 27
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tgaaacttaa tcagtggtgc aatgttgtaa natgggagtt cagcaacccc actccatnca 120
tcaggagtcg cgagtttctt tggcaagaag ggcacactgc ttttgcaaca aaggatgaag 180
canatgcaga agttcttgag attctggaat tatataggcg tatatacgaa gagtatttgg 240
cagttcctgt cataaagggt aagaanagtg agcttgagaa gtttgctggt ggactctaca 300
ctancaatgt tgaggcattt attccaaaca ctggtcgtgg tatccaaggt gcaacttctc 360
attgtttggg ccaaaatttt gctaaaatgt ttgagataaa ctttgaaaat gaaaagggag 420
agaaagcaat ggtctggcag aattcatggg cctatagtac tcgaactatt ggggtcatgg 480
tgatggttca tggtgatgac aangggattg gtactacctc ctaaagtagc atcagtacaa 540
gttattgtga ttcctgtgcc ttacaaagat gccgatactc aaggaatctt tgatgcctgt 600
ctgcactgtg aatacattga tgaagcagga tngcgctgag cagatctaga gatatatctc 660
ctggatgaga tccactggga atgaaagggt ctcnaga                           697
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<210> 28
<211> 173
<212> PRT
<213> Glycine max

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21

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<220>
<221> UNSURE
<222> (167)

<400> 28

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Glu Thr Val Met Tyr Pro Tyr Tyr Ser Lys Trp Ile Xaa Xaa His Arg
 1               5                  10                  15

Asp Leu Pro Leu Lys Leu Asn Gln Trp Cys Asn Val Val Xaa Trp Glu
            20                  25                  30

Phe Ser Asn Pro Thr Pro Xaa Ile Arg Ser Arg Glu Phe Leu Trp Gln
        35                  40                  45

Glu Gly His Thr Ala Phe Ala Thr Lys Asp Glu Ala Xaa Ala Glu Val
    50                  55                  60

Leu Glu Ile Leu Glu Leu Tyr Arg Arg Ile Tyr Glu Glu Tyr Leu Ala
 65                  70                  75                  80

Val Pro Val Ile Lys Gly Lys Xaa Ser Glu Leu Glu Lys Phe Ala Gly
                85                  90                  95

Gly Leu Tyr Thr Xaa Asn Val Glu Ala Phe Ile Pro Asn Thr Gly Arg
                100                 105                 110

Gly Ile Gln Gly Ala Thr Ser His Cys Leu Gly Gln Asn Phe Ala Lys
            115                 120                 125

Met Phe Glu Ile Asn Phe Glu Asn Glu Lys Gly Glu Lys Ala Met Val
    130                 135                 140

Trp Gln Asn Ser Trp Ala Tyr Ser Thr Arg Thr Ile Gly Val Met Val
145                 150                 155                 160

Met Val His Gly Asp Asp Xaa Gly Ile Gly Thr Thr Ser
                165                 170
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<210> 29
<211> 564
<212> DNA
<213> Triticum aestivum

22

<220>
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<221> unsure
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ttttgcaact aaagaggagg cagatgaaga ggtcctccaa atattggaac tctacaggag 120
aatatatgaa gaatttttag cagttccagt gtccaaaggg aggaaaagtg agatggaaaa 180
gtttgctggt ggactttata caaccagtgt agaggccttc attccaaata ctggccgtgg 240
tatacaaggt gcaacttcac attgtcttgg tcaaaacttt gcaaagatgt ttgatatcac 300
tttcgagaat gaaaagggtg aacggtccat ggtgtggcag aactcttggg catacactac 360
ccgctcgatt gggtcatga taatgacaca tggtgatgac aagggcttag tgctgccacc 420
aaaggtgacc tatccaggnc attgtatcct gtgccattaa agatgntgac acaacagcta 480
ttaaaggggc gtcgagcggc gttacacctt gaccaactgg atcggnagat ttgatnccgt 540
                                                                 564
gaaataccc caggtggaaa atcn

<210> 30
<211> 152
<212> PRT
<213> Triticum aestivum

<400> 30
Ser Asn Pro Thr Pro Phe Ile Arg Ser Arg Glu Phe Leu Trp Gln Glu
1   5   10   15

Gly His Thr Val Phe Ala Thr Lys Glu Glu Ala Asp Glu Glu Val Leu
            20   25   30

Gln Ile Leu Glu Leu Tyr Arg Arg Ile Tyr Glu Glu Phe Leu Ala Val
            35   40   45

Pro Val Ser Lys Gly Arg Lys Ser Glu Met Glu Lys Phe Ala Gly Gly
        50   55   60

Leu Tyr Thr Thr Ser Val Glu Ala Phe Ile Pro Asn Thr Gly Arg Gly
65   70   75   80

Ile Gln Gly Ala Thr Ser His Cys Leu Gly Gln Asn Phe Ala Lys Met
            85   90   95

Phe Asp Ile Thr Phe Glu Asn Glu Lys Gly Glu Arg Ser Met Val Trp
            100   105   110

23

Gln Asn Ser Trp Ala Tyr Thr Thr Arg Ser Ile Gly Val Met Ile Met
        115   120   125

Thr His Gly Asp Asp Lys Gly Leu Val Leu Pro Pro Lys Val Thr Tyr
    130   135   140

Pro Gly His Cys Ile Leu Cys His
145   150

<210> 31
<211> 1072
<212> PRT
<213> Saccharomyces cerevisiae

<400> 31
Met Ser Glu Ser Asn Ala His Phe Ser Phe Pro Lys Glu Glu Glu Lys
  1   5   10   15

Val Leu Ser Leu Trp Asp Glu Ile Asp Ala Phe His Thr Ser Leu Glu
            20   25   30

Leu Thr Lys Asp Lys Pro Glu Phe Ser Phe Phe Asp Gly Pro Pro Phe
        35   40   45

Ala Thr Gly Thr Pro His Tyr Gly His Ile Leu Ala Ser Thr Ile Lys
    50   55   60

Asp Ile Val Pro Arg Tyr Ala Thr Met Thr Gly His His Val Glu Arg
65   70   75   80

Arg Phe Gly Trp Asp Thr His Gly Val Pro Ile Glu His Ile Ile Asp
                85   90   95

Lys Lys Leu Gly Ile Thr Gly Lys Asp Asp Val Phe Lys Tyr Gly Leu
        100   105   110

Glu Asn Tyr Asn Asn Glu Cys Arg Ser Ile Val Met Thr Tyr Ala Ser
        115   120   125

Asp Trp Arg Lys Thr Ile Gly Arg Leu Gly Arg Trp Ile Asp Phe Asp
    130   135   140

Asn Asp Tyr Lys Thr Met Tyr Pro Ser Phe Met Glu Ser Thr Trp Trp
145   150   155   160

Ala Phe Lys Gln Leu His Glu Lys Gly Gln Val Tyr Arg Gly Phe Lys
                165   170   175

Val Met Pro Tyr Ser Thr Gly Leu Thr Thr Pro Leu Ser Asn Phe Glu
            180   185   190

Ala Gln Gln Asn Tyr Lys Asp Val Asn Asp Pro Ala Val Thr Ile Gly
        195   200   205

Phe Asn Val Ile Gly Gln Glu Lys Thr Gln Leu Val Ala Trp Thr Thr
    210   215   220

Thr Pro Trp Thr Leu Pro Ser Asn Leu Ser Leu Cys Val Asn Ala Asp
225   230   235   240

24

Phe Glu Tyr Val Lys Ile Tyr Asp Glu Thr Arg Asp Arg Tyr Phe Ile
245   250   255

Leu Leu Glu Ser Leu Ile Lys Thr Leu Tyr Lys Lys Pro Lys Asn Glu
260   265   270

Lys Tyr Lys Ile Val Glu Lys Ile Lys Gly Ser Asp Leu Val Gly Leu
275   280   285

Lys Tyr Glu Pro Leu Phe Pro Tyr Phe Ala Glu Gln Phe His Glu Thr
290   295   300

Ala Phe Arg Val Ile Ser Asp Asp Tyr Val Thr Ser Asp Ser Gly Thr
305   310   315   320

Gly Ile Val His Asn Ala Pro Ala Phe Gly Glu Glu Asp Asn Ala Ala
325   330   335

Cys Leu Lys Asn Gly Val Ile Ser Glu Asp Ser Val Leu Pro Asn Ala
340   345   350

Ile Asp Asp Leu Gly Arg Phe Thr Lys Asp Val Pro Asp Phe Glu Gly
355   360   365

Val Tyr Val Lys Asp Ala Asp Lys Leu Ile Ile Lys Tyr Leu Thr Asn
370   375   380

Thr Gly Asn Leu Leu Leu Ala Ser Gln Ile Arg His Ser Tyr Pro Phe
385   390   395   400

Cys Trp Arg Ser Asp Thr Pro Leu Leu Tyr Arg Ser Val Pro Ala Trp
405   410   415

Phe Val Arg Val Lys Asn Ile Val Pro Gln Met Leu Asp Ser Val Met
420   425   430

Lys Ser His Trp Val Pro Asn Thr Ile Lys Glu Lys Arg Phe Ala Asn
435   440   445

Trp Ile Ala Asn Ala Arg Asp Trp Asn Val Ser Arg Asn Arg Tyr Trp
450   455   460

Gly Thr Pro Ile Pro Leu Trp Val Ser Asp Asp Phe Glu Glu Val Val
465   470   475   480

Cys Val Gly Ser Ile Lys Glu Leu Glu Glu Leu Thr Gly Val Arg Asn
485   490   495

Ile Thr Asp Leu His Arg Asp Val Ile Asp Lys Leu Thr Ile Pro Ser
500   505   510

Lys Gln Gly Lys Gly Asp Leu Lys Arg Ile Glu Glu Val Phe Asp Cys
515   520   525

Trp Phe Glu Ser Gly Ser Met Pro Tyr Ala Ser Gln His Tyr Pro Phe
530   535   540

Glu Asn Thr Glu Lys Phe Asp Glu Arg Val Pro Ala Asn Phe Ile Ser
545   550   555   560

25

Glu Gly Leu Asp Gln Thr Arg Gly Trp Phe Tyr Thr Leu Ala Val Leu
565   570   575

Gly Thr His Leu Phe Gly Ser Val Pro Tyr Lys Asn Val Ile Val Ser
580   585   590

Gly Ile Val Leu Ala Ala Asp Gly Arg Lys Met Ser Lys Ser Leu Lys
595   600   605

Asn Tyr Pro Asp Pro Ser Ile Val Leu Asn Lys Tyr Gly Ala Asp Ala
610   615   620

Leu Arg Leu Tyr Leu Ile Asn Ser Pro Val Leu Lys Ala Glu Ser Leu
625   630   635   640

Lys Phe Lys Glu Glu Gly Val Lys Glu Val Val Ser Lys Val Leu Leu
645   650   655

Pro Trp Trp Asn Ser Phe Lys Phe Leu Asp Gly Gln Ile Ala Leu Leu
660   665   670

Lys Lys Met Ser Asn Ile Asp Phe Gln Tyr Asp Asp Ser Val Lys Ser
675   680   685

Asp Asn Val Met Asp Arg Trp Ile Leu Ala Ser Met Gln Ser Leu Val
690   695   700

Gln Phe Ile His Glu Glu Met Gly Gln Tyr Lys Leu Tyr Thr Val Val
705   710   715   720

Pro Lys Leu Leu Asn Phe Ile Asp Glu Leu Thr Asn Trp Tyr Ile Arg
725   730   735

Phe Asn Arg Arg Arg Leu Lys Gly Glu Asn Gly Val Glu Asp Cys Leu
740   745   750

Lys Ala Leu Asn Ser Leu Phe Asp Ala Leu Phe Thr Phe Val Arg Ala
755   760   765

Met Ala Pro Phe Thr Pro Phe Leu Ser Glu Ser Ile Tyr Leu Arg Leu
770   775   780

Lys Glu Tyr Ile Pro Glu Ala Val Leu Ala Lys Tyr Gly Lys Asp Gly
785   790   795   800

Arg Ser Val His Phe Leu Ser Tyr Pro Val Val Lys Lys Glu Tyr Phe
805   810   815

Asp Glu Ala Ile Glu Thr Ala Val Ser Arg Met Gln Ser Val Ile Asp
820   825   830

Leu Gly Arg Asn Ile Arg Glu Lys Lys Thr Ile Ser Leu Lys Thr Pro
835   840   845

Leu Lys Thr Leu Val Ile Leu His Ser Asp Glu Ser Tyr Leu Lys Asp
850   855   860

Val Glu Ala Leu Lys Asn Tyr Ile Ile Glu Glu Leu Asn Val Arg Asp
865   870   875   880

26

Val Val Ile Thr Ser Asp Glu Ala Lys Tyr Gly Val Glu Tyr Lys Ala
885   890   895

Val Ala Asp Trp Pro Val Leu Gly Lys Lys Leu Lys Lys Asp Ala Lys
900   905   910

Lys Val Lys Asp Ala Leu Pro Ser Val Thr Ser Glu Gln Val Arg Glu
915   920   925

Tyr Leu Glu Ser Gly Lys Leu Glu Val Ala Gly Ile Glu Leu Val Lys
930   935   940

Gly Asp Leu Asn Ala Ile Arg Gly Leu Pro Glu Ser Ala Val Gln Ala
945   950   955   960

Gly Gln Glu Thr Arg Thr Asp Gln Asp Val Leu Ile Ile Met Asp Thr
965   970   975

Asn Ile Tyr Ser Glu Leu Lys Ser Glu Gly Leu Ala Arg Glu Leu Val
980   985   990

Asn Arg Ile Gln Lys Leu Arg Lys Lys Cys Gly Leu Glu Ala Thr Asp
995   1000   1005

Asp Val Leu Val Glu Tyr Glu Leu Val Lys Asp Thr Ile Asp Phe Glu
1010   1015   1020

Ala Ile Val Lys Glu His Phe Asp Met Leu Ser Lys Thr Cys Arg Ser
1025   1030   1035   1040

Asp Ile Ala Lys Tyr Asp Gly Ser Lys Thr Asp Pro Ile Gly Asp Glu
1045   1050   1055

Glu Gln Ser Ile Asn Asp Thr Ile Phe Lys Leu Lys Val Phe Lys Leu
1060   1065   1070

<210>   32
<211>   1266
<212>   PRT
<213>   Homo sapiens

<400>   32
Met Ser Asn Lys Met Leu Gln Gln Val Pro Glu Asn Ile Asn Phe Pro
1   5   10   15

Ala Glu Glu Glu Lys Ile Leu Glu Phe Trp Thr Glu Phe Asn Cys Phe
20   25   30

Gln Glu Cys Leu Lys Gln Ser Lys His Lys Pro Lys Phe Thr Phe Tyr
35   40   45

Asp Gly Pro Pro Phe Ala Thr Gly Leu Pro His Tyr Gly His Ile Leu
50   55   60

Ala Gly Thr Ile Lys Asp Ile Val Thr Arg Tyr Ala His Gln Ser Gly
65   70   75   80

Phe His Val Asp Arg Arg Phe Gly Trp Asp Cys His Gly Leu Pro Val
85   90   95

27

```
Glu Tyr Glu Ile Asp Lys Thr Leu Gly Ile Arg Gly Pro Glu Asp Val
            100                   105                   110

Ala Lys Met Gly Ile Thr Glu Tyr Asn Asn Gln Cys Arg Ala Ile Val
            115                   120                   125

Met Arg Tyr Ser Ala Glu Trp Lys Ser Thr Val Ser Arg Leu Gly Arg
            130                   135                   140

Trp Ile Asp Phe Asp Asn Asp Tyr Lys Thr Leu Tyr Pro Gln Phe Met
145                   150                   155                   160

Glu Ser Val Trp Trp Val Phe Lys Gln Leu Tyr Asp Lys Gly Leu Val
                  165                   170                   175

Tyr Arg Gly Val Lys Val Met Pro Phe Ser Thr Ala Cys Asn Thr Pro
            180                   185                   190

Leu Ser Asn Phe Glu Ser His Gln Asn Tyr Lys Asp Val Gln Asp Pro
            195                   200                   205

Ser Val Phe Val Thr Phe Pro Leu Glu Glu Asp Glu Thr Val Ser Leu
            210                   215                   220

Val Ala Trp Thr Thr Thr Pro Trp Thr Leu Pro Ser Asn Leu Ala Val
225                   230                   235                   240

Cys Val Asn Pro Glu Met Gln Tyr Val Lys Ile Lys Asp Val Ala Arg
                  245                   250                   255

Gly Arg Leu Leu Ile Leu Met Glu Ala Arg Leu Ser Ala Leu Tyr Lys
            260                   265                   270

Leu Glu Ser Asp Tyr Glu Ile Leu Glu Arg Phe Pro Gly Ala Tyr Leu
            275                   280                   285

Lys Gly Lys Lys Tyr Arg Pro Leu Phe Asp Tyr Phe Leu Lys Cys Lys
            290                   295                   300

Glu Asn Gly Ala Phe Thr Val Leu Val Asp Asn Tyr Val Lys Glu Glu
305                   310                   315                   320

Glu Gly Thr Gly Val Val His Gln Ala Pro Tyr Phe Gly Ala Glu Asp
                  325                   330                   335

Tyr Arg Val Cys Met Asp Phe Asn Ile Ile Arg Lys Asp Ser Leu Pro
            340                   345                   350

Val Cys Pro Val Asp Ala Ser Gly Cys Phe Thr Thr Glu Val Thr Asp
            355                   360                   365

Phe Ala Gly Gln Tyr Val Lys Asp Ala Asp Lys Ser Ile Ile Arg Thr
            370                   375                   380

Leu Lys Glu Gln Gly Arg Leu Leu Val Ala Thr Thr Phe Thr His Ser
385                   390                   395                   400

Tyr Pro Phe Cys Trp Arg Ser Asp Thr Pro Leu Ile Tyr Lys Ala Val
                  405                   410                   415
```

28

Pro Ser Trp Phe Val Arg Val Glu Asn Met Val Asp Gln Leu Leu Arg
     420   425   430

Asn Asn Asp Leu Cys Tyr Trp Val Pro Glu Leu Val Arg Glu Lys Arg
     435   440   445

Phe Gly Asn Trp Leu Lys Asp Ala Arg Asp Trp Thr Ile Ser Arg Asn
     450   455   460

Arg Tyr Trp Gly Thr Pro Ile Pro Leu Trp Val Ser Asp Asp Phe Glu
465   470   475   480

Glu Val Val Cys Ile Gly Ser Val Ala Glu Leu Glu Glu Leu Ser Gly
          485   490   495

Ala Lys Ile Ser Asp Leu His Arg Glu Ser Val Asp His Leu Thr Ile
          500   505   510

Pro Ser Arg Cys Gly Lys Gly Ser Leu His Arg Ile Ser Glu Val Phe
          515   520   525

Asp Cys Trp Phe Glu Ser Gly Ser Met Pro Tyr Ala Gln Val His Tyr
          530   535   540

Pro Phe Glu Asn Lys Arg Glu Phe Glu Asp Ala Phe Pro Ala Asp Phe
545   550   555   560

Ile Ala Glu Gly Ile Asp Gln Thr Arg Gly Trp Phe Tyr Thr Leu Leu
          565   570   575

Val Leu Ala Thr Ala Leu Phe Gly Gln Pro Pro Phe Lys Asn Val Ile
          580   585   590

Val Asn Gly Leu Val Leu Ala Ser Asp Gly Gln Lys Met Ser Lys Arg
          595   600   605

Lys Lys Asn Tyr Pro Asp Pro Val Ser Ile Ile Gln Lys Tyr Gly Ala
     610   615   620

Asp Ala Leu Arg Leu Tyr Leu Ile Asn Ser Pro Val Val Arg Ala Glu
625   630   635   640

Asn Leu Arg Phe Lys Glu Glu Gly Val Arg Asp Val Leu Lys Asp Val
          645   650   655

Leu Leu Pro Trp Tyr Asn Ala Tyr Arg Phe Leu Ile Gln Asn Val Leu
          660   665   670

Arg Leu Gln Lys Glu Glu Glu Ile Glu Phe Leu Tyr Asn Glu Asn Thr
          675   680   685

Val Arg Glu Ser Pro Asn Ile Thr Asp Arg Trp Ile Leu Ser Phe Met
     690   695   700

Gln Ser Leu Ile Gly Phe Phe Glu Thr Glu Met Ala Ala Tyr Arg Leu
705   710   715   720

Tyr Thr Val Val Pro Arg Leu Val Lys Phe Val Asp Ile Leu Thr Asn
          725   730   735

Trp Tyr Val Arg Met Asn Arg Arg Arg Leu Lys Gly Glu Asn Gly Met
        740   745   750

Glu Asp Cys Val Met Ala Leu Glu Thr Leu Phe Ser Val Leu Leu Ser
        755   760   765

Leu Cys Arg Leu Met Ala Pro Tyr Thr Pro Phe Leu Thr Glu Leu Met
        770   775   780

Tyr Gln Asn Leu Lys Val Leu Ile Asp Pro Val Ser Val Gln Asp Lys
785   790   795   800

Asp Thr Leu Ser Ile His Tyr Leu Met Leu Pro Arg Val Arg Glu Glu
                805   810   815

Leu Ile Asp Lys Lys Thr Glu Ser Ala Val Ser Gln Met Gln Ser Val
        820   825   830

Ile Glu Leu Gly Arg Val Ile Arg Asp Arg Lys Thr Ile Pro Ile Lys
        835   840   845

Tyr Pro Leu Lys Glu Ile Val Val Ile His Gln Asp Pro Glu Ala Leu
        850   855   860

Lys Asp Ile Lys Ser Leu Glu Lys Tyr Ile Ile Glu Glu Leu Asn Val
865   870   875   880

Arg Lys Val Thr Leu Ser Thr Asp Lys Asn Lys Tyr Gly Ile Arg Leu
                885   890   895

Arg Ala Glu Pro Asp His Met Val Leu Gly Lys Arg Leu Lys Gly Ala
                900   905   910

Phe Lys Ala Val Met Thr Ser Ile Lys Gln Leu Ser Ser Glu Glu Leu
        915   920   925

Glu Gln Phe Gln Lys Thr Gly Thr Ile Val Val Glu Gly His Glu Leu
        930   935   940

His Asp Glu Asp Ile Arg Leu Met Tyr Thr Phe Asp Gln Ala Thr Gly
945   950   955   960

Gly Thr Ala Gln Phe Glu Ala His Ser Asp Ala Gln Ala Leu Val Leu
                965   970   975

Leu Asp Val Thr Pro Asp Gln Ser Met Val Asp Glu Gly Met Ala Arg
                980   985   990

Glu Val Ile Asn Arg Ile Gln Lys Leu Arg Lys Lys Cys Asn Leu Val
        995   1000   1005

Pro Thr Asp Glu Ile Thr Val Tyr Tyr Lys Ala Lys Ser Glu Gly Thr
        1010   1015   1020

Tyr Leu Asn Ser Val Ile Glu Ser His Thr Glu Phe Ile Phe Thr Thr
1025   1030   1035   1040

Ile Lys Ala Pro Leu Lys Pro Tyr Pro Val Ser Pro Ser Asp Lys Val
                1045   1050   1055

30

Leu Ile Gln Glu Lys Thr Gln Leu Lys Gly Ser Glu Leu Glu Ile Thr
          1060   1065   1070

Leu Thr Arg Gly Ser Ser Leu Pro Gly Pro Ala Cys Ala Tyr Val Asn
          1075   1080   1085

Leu Asn Ile Cys Ala Asn Gly Ser Glu Gln Gly Gly Val Leu Leu Leu
          1090   1095   1100

Glu Asn Pro Lys Gly Asp Asn Arg Leu Asp Leu Leu Lys Leu Lys Ser
1105   1110   1115   1120

Val Val Thr Ser Ile Phe Gly Val Lys Asn Thr Glu Leu Ala Val Phe
          1125   1130   1135

His Asp Glu Thr Glu Ile Gln Asn Gln Thr Asp Leu Leu Ser Leu Ser
          1140   1145   1150

Gly Lys Thr Leu Cys Val Thr Ala Gly Ser Ala Pro Ser Leu Ile Asn
          1155   1160   1165

Ser Ser Ser Thr Leu Leu Cys Gln Tyr Ile Asn Leu Gln Leu Leu Asn
          1170   1175   1180

Ala Lys Pro Gln Glu Cys Leu Met Gly Thr Val Gly Thr Leu Leu Leu
1185   1190   1195   1200

Glu Asn Pro Leu Gly Gln Asn Gly Leu Thr His Gln Gly Leu Leu Tyr
          1205   1210   1215

Glu Ala Ala Lys Val Phe Gly Leu Arg Ser Arg Lys Leu Lys Leu Phe
          1220   1225   1230

Leu Asn Glu Thr Gln Thr Gln Glu Ile Thr Glu Asp Ile Pro Val Lys
          1235   1240   1245

Thr Leu Asn Met Lys Thr Val Tyr Val Ser Val Leu Pro Thr Thr Ala
          1250   1255   1260

Asp Phe
1265

<210> 33
<211> 1262
<212> PRT
<213> Homo sapiens

<400> 33
Met Leu Gln Gln Val Pro Glu Asn Ile Asn Phe Pro Ala Glu Glu Glu
1   5   10   15

Lys Ile Leu Glu Phe Trp Thr Glu Phe Asn Cys Phe Gln Glu Cys Leu
          20   25   30

Lys Gln Ser Lys His Lys Pro Lys Phe Thr Phe Tyr Asp Gly Pro Pro
          35   40   45

Phe Ala Thr Gly Leu Pro His Tyr Gly His Ile Leu Ala Gly Thr Ile
          50   55   60

31

Lys Asp Ile Val Thr Arg Tyr Ala His Gln Ser Gly Phe His Val Asp
65   70   75   80

Arg Arg Phe Gly Trp Asp Cys His Gly Leu Pro Val Glu Tyr Glu Ile
                    85   90   95

Asp Lys Thr Leu Gly Ile Arg Gly Pro Glu Asp Val Ala Lys Met Gly
             100   105   110

Ile Thr Glu Tyr Asn Asn Gln Cys Arg Ala Ile Val Met Arg Tyr Ser
         115   120   125

Ala Glu Trp Lys Ser Thr Val Ser Arg Leu Gly Arg Trp Ile Asp Phe
     130   135   140

Asp Asn Asp Tyr Lys Thr Leu Tyr Pro Gln Phe Met Glu Ser Val Trp
145   150   155   160

Trp Val Phe Lys Gln Leu Tyr Asp Lys Gly Leu Val Tyr Arg Gly Val
             165   170   175

Lys Val Met Pro Phe Ser Thr Ala Cys Asn Thr Pro Leu Ser Asn Phe
             180   135   190

Glu Ser His Gln Asn Tyr Lys Asp Val Gln Asp Pro Ser Val Phe Val
         195   200   205

Thr Phe Pro Leu Glu Glu Asp Glu Thr Val Ser Leu Val Ala Trp Thr
         210   215   220

Thr Thr Pro Trp Thr Leu Pro Ser Asn Leu Ala Val Cys Val Asn Pro
225   230   235   240

Glu Met Gln Tyr Val Lys Ile Lys Asp Val Ala Arg Gly Arg Leu Leu
             245   250   255

Ile Leu Met Glu Ala Arg Leu Ser Ala Leu Tyr Lys Leu Glu Ser Asp
             260   265   270

Tyr Glu Ile Leu Glu Arg Phe Pro Gly Ala Tyr Leu Lys Gly Lys Lys
         275   280   285

Tyr Arg Pro Leu Phe Asp Tyr Phe Leu Lys Cys Lys Glu Asn Gly Ala
     290   295   300

Phe Thr Val Leu Val Asp Asn Tyr Val Lys Glu Glu Glu Gly Thr Gly
305   310   315   320

Val Val His Gln Ala Pro Tyr Phe Gly Ala Glu Asp Tyr Arg Val Cys
             325   330   335

Met Asp Phe Asn Ile Ile Arg Lys Asp Ser Leu Pro Val Cys Pro Val
             340   345   350

Asp Ala Ser Gly Cys Phe Thr Thr Glu Val Thr Asp Phe Ala Gly Gln
             355   360   365

Tyr Val Lys Asp Ala Asp Lys Ser Ile Ile Arg Thr Leu Lys Glu Gln
370   375   380

32

```
Gly Arg Leu Leu Val Ala Thr Thr Phe Thr His Ser Tyr Pro Phe Cys
385                 390             395                     400

Trp Arg Ser Asp Thr Pro Leu Ile Tyr Lys Ala Val Pro Ser Trp Phe
                405                 410                 415

Val Arg Val Glu Asn Met Val Asp Gln Leu Leu Arg Asn Asn Asp Leu
                420             425                 430

Cys Tyr Trp Val Pro Glu Leu Val Arg Glu Lys Arg Phe Gly Asn Trp
            435                 440                 445

Leu Lys Asp Ala Arg Asp Trp Thr Ile Ser Arg Asn Arg Tyr Trp Gly
    450                 455                 460

Thr Pro Ile Pro Leu Trp Val Ser Asp Asp Phe Glu Glu Val Val Cys
465                 470                 475                     480

Ile Gly Ser Val Ala Glu Leu Glu Glu Leu Ser Gly Ala Lys Ile Ser
                485                 490                 495

Asp Leu His Arg Glu Ser Val Asp His Leu Thr Ile Pro Ser Arg Cys
            500             505                 510

Gly Lys Gly Ser Leu His Arg Ile Ser Glu Val Phe Asp Cys Trp Phe
    515                 520                 525

Glu Ser Gly Ser Met Pro Tyr Ala Gln Val His Tyr Pro Phe Glu Asn
    530                 535                 540

Lys Arg Glu Phe Glu Asp Ala Phe Pro Ala Asp Phe Ile Ala Glu Gly
545             550                 555                     560

Ile Asp Gln Thr Arg Gly Trp Phe Tyr Thr Leu Leu Val Leu Ala Thr
            565                 570                 575

Ala Leu Phe Gly Gln Pro Pro Phe Lys Asn Val Ile Val Asn Gly Leu
            580                 585                 590

Val Leu Ala Ser Asp Gly Gln Lys Met Ser Lys Arg Lys Lys Asn Tyr
    595                 600                 605

Pro Asp Pro Val Ser Ile Ile Gln Lys Tyr Gly Ala Asp Ala Leu Arg
    610                 615                 620

Leu Tyr Leu Ile Asn Ser Pro Val Val Arg Ala Glu Asn Leu Arg Phe
625                 630                 635                     640

Lys Glu Glu Gly Val Arg Asp Val Leu Lys Asp Val Leu Leu Pro Trp
            645                 650                     655

Tyr Asn Ala Tyr Arg Phe Leu Ile Gln Asn Val Leu Arg Leu Gln Lys
            660                 665                 670

Glu Glu Glu Ile Glu Phe Leu Tyr Asn Glu Asn Thr Val Arg Glu Ser
        675                 680                 685

Pro Asn Ile Thr Asp Arg Trp Ile Leu Ser Phe Met Gln Ser Leu Ile
    690                 695                 700
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33

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Gly Phe Phe Glu Thr Glu Met Ala Ala Tyr Arg Leu Tyr Thr Val Val
705           710           715                       720

Pro Arg Leu Val Lys Phe Val Asp Ile Leu Thr Asn Trp Tyr Val Arg
              725               730               735

Met Asn Arg Arg Arg Leu Lys Gly Glu Asn Gly Met Glu Asp Cys Val
              740               745               750

Met Ala Leu Glu Thr Leu Phe Ser Val Leu Leu Ser Leu Cys Arg Leu
              755               760               765

Ile Ala Pro Tyr Thr Pro Phe Leu Thr Glu Leu Met Tyr Gln Asn Leu
              770               775           780

Lys Val Leu Ile Asp Pro Val Ser Val Gln Asp Lys Asp Thr Leu Ser
785               790               795               800

Ile His Tyr Leu Met Leu Pro Arg Val Arg Glu Glu Leu Ile Asp Lys
              805               810               815

Lys Thr Glu Ser Ala Val Ser Gln Met Gln Ser Val Ile Glu Leu Gly
              820               825               830

Arg Val Ile Arg Asp Arg Lys Thr Ile Pro Ile Lys Tyr Pro Leu Lys
              835               840               845

Glu Ile Val Val Ile His Gln Asp Pro Glu Ala Leu Lys Asp Ile Lys
850               855               860

Ser Leu Glu Lys Tyr Ile Ile Glu Glu Leu Asn Val Arg Lys Val Thr
865               870               875               880

Leu Ser Thr Asp Lys Asn Lys Tyr Gly Ile Arg Leu Arg Ala Glu Pro
              885               890               895

Asp His Met Val Leu Gly Lys Arg Leu Lys Gly Ala Phe Lys Ala Val
              900               905               910

Met Thr Ser Ile Lys Gln Leu Ser Ser Glu Glu Leu Glu Gln Phe Gln
              915               920               925

Lys Thr Gly Thr Ile Val Val Glu Gly His Glu Leu His Asp Glu Asp
930               935               940

Ile Arg Leu Met Tyr Thr Phe Asp Gln Ala Thr Gly Gly Thr Ala Gln
              945               950           955               960

Phe Glu Ala His Ser Asp Ala Gln Ala Leu Val Leu Leu Asp Val Thr
              965               970               975

Pro Asp Gln Ser Met Val Asp Glu Gly Met Ala Arg Glu Val Ile Asn
              980               985               990

Arg Ile Gln Lys Leu Arg Lys Lys Cys Asn Leu Val Pro Thr Asp Glu
              995           1000              1005

Ile Thr Val Tyr Tyr Lys Ala Lys Ser Glu Gly Thr Tyr Leu Asn Ser
              1010          1015              1020
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34

Val Ile Glu Ser His Thr Glu Phe Ile Phe Thr Thr Ile Lys Ala Pro
1025   1030   1035   1040

Leu Lys Pro Tyr Pro Val Ser Pro Ser Asp Lys Val Leu Ile Gln Glu
                1045   1050   1055

Lys Thr Gln Leu Lys Gly Ser Glu Leu Glu Ile Thr Leu Thr Arg Gly
            1060   1065   1070

Ser Ser Leu Pro Gly Pro Ala Cys Ala Tyr Val Asn Leu Asn Ile Cys
            1075   1080   1085

Ala Asn Gly Ser Glu Gln Gly Gly Val Leu Leu Leu Glu Asn Pro Lys
        1090   1095   1100

Gly Asp Asn Arg Leu Asp Leu Leu Lys Leu Lys Ser Val Val Thr Ser
1105   1110   1115   1120

Ile Phe Gly Val Lys Asn Thr Glu Leu Ala Val Phe His Asp Glu Thr
                1125   1130   1135

Glu Ile Gln Asn Gln Thr Asp Leu Leu Ser Leu Ser Gly Lys Thr Leu
            1140   1145   1150

Cys Val Thr Ala Gly Ser Ala Pro Ser Leu Ile Asn Ser Ser Ser Thr
            1155   1160   1165

Leu Leu Cys Gln Tyr Ile Asn Leu Gln Leu Leu Asn Ala Lys Pro Gln
        1170   1175   1180

Glu Cys Leu Met Gly Thr Val Gly Thr Leu Leu Leu Glu Asn Pro Leu
1185   1190   1195   1200

Gly Gln Asn Gly Leu Thr His Gln Gly Leu Leu Tyr Glu Ala Ala Lys
            1205   1210   1215

Val Phe Gly Leu Arg Ser Arg Lys Leu Lys Leu Phe Leu Asn Glu Thr
            1220   1225   1230

Gln Thr Gln Glu Ile Thr Glu Asp Ile Pro Val Lys Thr Leu Asn Met
        1235   1240   1245

Lys Thr Val Tyr Val Ser Val Leu Pro Thr Thr Ala Asp Phe
    1250   1255   1260

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<211>   626
<212>   PRT
<213>   Arabidopsis thaliana

<400>   34
Met Glu Gly Ala Ala Asp Gln Thr Thr Lys Ala Leu Ser Glu Leu Ala
  1   5   10   15

Met Asp Ser Ser Thr Thr Leu Asn Ala Ala Glu Ser Ser Ala Gly Asp
            20   25   30

Gly Ala Gly Pro Arg Ser Lys Asn Ala Leu Lys Lys Glu Gln Lys Met
        35   40   45

35

Lys Gln Lys Glu Glu Glu Lys Arg Arg Lys Asp Glu Glu Lys Ala Glu
  50   55   60

Lys Ala Lys Gln Ala Pro Lys Ala Ser Ser Gln Lys Ala Val Ala Ala
 65   70   75   80

Asp Asp Glu Glu Met Asp Ala Thr Gln Tyr Tyr Glu Asn Arg Leu Lys
          85   90   95

Tyr Leu Ala Ala Glu Lys Ala Lys Gly Glu Asn Pro Tyr Pro His Lys
        100   105   110

Phe Ala Val Ser Met Ser Ile Pro Lys Tyr Ile Glu Thr Tyr Gly Ser
      115   120   125

Leu Asn Asn Gly Asp His Val Glu Asn Ala Glu Glu Ser Leu Ala Gly
  130   135   140

Arg Ile Met Ser Lys Arg Ser Ser Ser Ser Lys Leu Phe Phe Tyr Asp
145   150   155   160

Leu His Gly Asp Asp Phe Lys Val Gln Val Met Ala Asp Ala Ser Lys
        165   170   175

Ser Gly Leu Asp Glu Ala Glu Phe Leu Lys Leu His Ser Asn Ala Lys
        180   185   190

Arg Gly Asp Ile Val Gly Val Ile Gly Phe Pro Gly Lys Thr Lys Arg
      195   200   205

Gly Glu Leu Ser Ile Phe Pro Arg Ser Phe Ile Leu Leu Ser His Cys
  210   215   220

Leu His Met Met Pro Arg Lys Ala Asp Asn Val Asn Ala Lys Lys Pro
225   230   235   240

Glu Ile Trp Val Pro Gly Gln Thr Arg Asn Pro Glu Ala Tyr Val Leu
          245   250   255

Lys Asp Gln Glu Ser Arg Tyr Arg Gln Arg His Leu Asp Met Ile Leu
        260   265   270

Asn Val Glu Val Arg Gln Ile Phe Arg Thr Arg Ala Lys Ile Ile Ser
      275   280   285

Tyr Val Arg Arg Phe Leu Asp Asn Lys Asn Phe Leu Glu Val Glu Thr
  290   295   300

Pro Met Met Asn Met Ile Ala Gly Gly Ala Ala Ala Arg Pro Phe Val
305   310   315   320

Thr His His Asn Asp Leu Asp Met Arg Leu Tyr Met Arg Ile Ala Pro
        325   330   335

Glu Leu Tyr Leu Lys Gln Leu Ile Val Gly Gly Leu Glu Arg Val Tyr
        340   345   350

Glu Ile Gly Lys Gln Phe Arg Asn Glu Gly Ile Asp Leu Thr His Asn
        355   360   365

36

Pro Glu Phe Thr Thr Cys Glu Phe Tyr Met Ala Phe Ala Asp Tyr Asn
370   375   380

Asp Leu Met Glu Met Thr Glu Val Met Leu Ser Gly Met Val Lys Glu
385   390   395   400

Leu Thr Gly Gly Tyr Lys Ile Lys Tyr Asn Ala Asn Gly Tyr Asp Lys
                405   410   415

Asp Pro Ile Glu Ile Asp Phe Thr Pro Pro Phe Arg Arg Ile Glu Met
                420   425   430

Ile Gly Glu Leu Glu Lys Val Ala Lys Leu Asn Ile Pro Lys Asp Leu
            435   440   445

Ala Ser Glu Glu Ala Asn Lys Tyr Leu Ile Asp Ala Cys Ala Arg Phe
        450   455   460

Asp Val Lys Cys Pro Pro Pro Gln Thr Thr Ala Arg Leu Leu Asp Lys
465   470   475   480

Leu Val Gly Glu Phe Leu Glu Pro Thr Cys Val Asn Pro Thr Phe Ile
            485   490   495

Ile Asn Gln Pro Glu Ile Met Ser Pro Leu Ala Lys Trp His Arg Ser
            500   505   510

Lys Ser Gly Leu Thr Glu Arg Phe Glu Leu Phe Ile Asn Lys His Glu
        515   520   525

Leu Cys Asn Ala Tyr Thr Glu Leu Asn Asp Pro Val Val Gln Arg Gln
        530   535   540

Arg Phe Ala Asp Gln Leu Lys Asp Arg Gln Ser Gly Asp Asp Glu Ala
545   550   555   560

Met Ala Leu Asp Glu Thr Phe Cys Asn Ala Leu Glu Tyr Gly Leu Ala
            565   570   575

Pro Thr Gly Gly Trp Gly Leu Gly Ile Asp Arg Leu Ser Met Leu Leu
            580   585   590

Thr Asp Ser Leu Asn Ile Lys Glu Val Leu Phe Phe Pro Ala Met Arg
        595   600   605

Pro Pro Gln Glu Glu Ser Ala Ala Ala Gln Ala Pro Leu Thr Glu Glu
            610   615   620

Lys Lys
625

<210> 35
<211> 451
<212> PRT
<213> Homo sapiens

<400> 35
Met Val Gly Ser Ala Leu Arg Arg Gly Ala His Ala Tyr Val Tyr Leu
1   5   10   15

37

Val Ser Lys Ala Ser His Ile Ser Arg Gly His Gln His Gln Ala Trp
            20   25   30

Gly Ser Arg Pro Pro Ala Ala Glu Cys Ala Thr Gln Arg Ala Pro Gly
            35   40   45

Ser Val Val Glu Leu Leu Gly Lys Ser Tyr Pro Gln Asp Asp His Ser
        50   55   60

Asn Leu Thr Arg Lys Val Leu Thr Arg Val Gly Arg Asn Leu His Asn
65   70   75   80

Gln Gln His His Pro Leu Trp Leu Ile Lys Glu Arg Val Lys Glu His
                    85   90   95

Phe Tyr Lys Gln Tyr Val Gly Arg Phe Gly Thr Pro Leu Phe Ser Val
            100   105   110

Tyr Asp Asn Leu Ser Pro Val Val Thr Thr Trp Gln Asn Phe Asp Ser
            115   120   125

Leu Leu Ile Pro Ala Asp His Pro Ser Arg Lys Lys Gly Asp Asn Tyr
        130   135   140

Tyr Leu Asn Arg Thr His Met Leu Arg Ala His Thr Ser Ala His Gln
145   150   155   160

Trp Asp Leu Leu His Ala Gly Leu Asp Ala Phe Leu Val Val Gly Asp
                165   170   175

Val Tyr Arg Arg Asp Gln Ile Asp Ser Gln His Tyr Pro Ile Phe His
            180   135   190

Gln Leu Glu Ala Val Arg Leu Phe Ser Lys His Glu Leu Phe Ala Gly
            195   200   205

Ile Lys Asp Gly Glu Ser Leu Gln Leu Phe Glu Gln Ser Ser Arg Ser
        210   215   220

Ala His Lys Gln Glu Thr His Thr Met Glu Ala Val Lys Leu Val Glu
225   230   235   240

Phe Asp Leu Lys Gln Thr Leu Thr Arg Leu Met Ala His Leu Phe Gly
                245   250   255

Asp Glu Leu Glu Ile Arg Trp Val Asp Cys Tyr Phe Pro Phe Thr His
            260   265   270

Pro Ser Phe Glu Met Glu Ile Asn Phe His Gly Glu Trp Leu Glu Val
            275   280   285

Leu Gly Cys Gly Val Met Glu Gln Gln Leu Val Asn Ser Ala Gly Ala
            290   295   300

Gln Asp Arg Ile Gly Trp Ala Phe Gly Leu Gly Leu Glu Arg Leu Ala
305   310   315   320

Met Ile Leu Tyr Asp Ile Pro Asp Ile Arg Leu Phe Trp Cys Glu Asp
                325   330   335

38

Glu Arg Phe Leu Lys Gln Phe Cys Val Ser Asn Ile Asn Gln Lys Val
340   345   350

Lys Phe Gln Pro Leu Ser Lys Tyr Pro Ala Val Ile Asn Asp Ile Ser
355   360   365

Phe Trp Leu Pro Ser Glu Asn Tyr Ala Glu Asn Asp Phe Tyr Asp Leu
370   375   380

Val Arg Thr Ile Gly Gly Asp Leu Val Glu Lys Val Asp Leu Ile Asp
385   390   395   400

Lys Phe Val His Pro Lys Thr His Lys Thr Ser His Cys Tyr Arg Ile
405   410   415

Thr Tyr Arg His Met Glu Arg Thr Leu Ser Gln Arg Glu Val Arg His
420   425   430

Ile His Gln Ala Leu Gln Glu Ala Ala Val Gln Leu Leu Gly Val Glu
435   440   445

Gly Arg Phe
450

<210>   36
<211>   503
<212>   PRT
<213>   Saccharomyces cerevisiae

<400>   36
Met Ser Asp Phe Gln Leu Glu Ile Leu Lys Lys Leu Asp Glu Leu Asp
1   5   10   15

Glu Ile Lys Ser Thr Leu Ala Thr Phe Pro Gln His Gly Ser Gln Asp
20   25   30

Val Leu Ser Ala Leu Asn Ser Leu Lys Ala His Asn Lys Leu Glu Phe
35   40   45

Ser Lys Val Asp Thr Val Thr Tyr Asp Leu Thr Lys Glu Gly Ala Gln
50   55   60

Ile Leu Asn Glu Gly Ser Tyr Glu Ile Lys Leu Val Lys Leu Ile Gln
65   70   75   80

Glu Leu Gly Gln Leu Gln Ile Lys Asp Val Met Ser Lys Leu Gly Pro
85   90   95

Gln Val Gly Lys Val Gly Gln Ala Arg Ala Phe Lys Asn Gly Trp Ile
100   105   110

Ala Lys Asn Ala Ser Asn Glu Leu Glu Leu Ser Ala Lys Leu Gln Asn
115   120   125

Thr Asp Leu Asn Glu Leu Thr Asp Glu Thr Gln Ser Ile Leu Ala Gln
130   135   140

Ile Lys Asn Asn Ser His Leu Asp Ser Ile Asp Ala Lys Ile Leu Asn
145   150   155   160

39
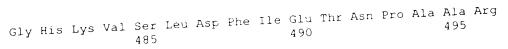
Asp Leu Lys Lys Arg Lys Leu Ile Ala Gln Gly Lys Ile Thr Asp Phe
165   170   175

Ser Val Thr Lys Gly Pro Glu Phe Ser Thr Asp Leu Thr Lys Leu Glu
180   185   190

Thr Asp Leu Thr Ser Asp Met Val Ser Thr Asn Ala Tyr Lys Asp Leu
195   200   205

Lys Phe Lys Pro Tyr Asn Phe Asn Ser Gln Gly Val Gln Ile Ser Ser
210   215   220

Gly Ala Leu His Pro Leu Asn Lys Val Arg Glu Glu Phe Arg Gln Ile
225   230   235   240

Phe Phe Ser Met Gly Phe Thr Glu Met Pro Ser Asn Gln Tyr Val Glu
245   250   255

Thr Gly Phe Trp Asn Phe Asp Ala Leu Tyr Val Pro Gln Gln His Pro
260   265   270

Ala Arg Asp Leu Gln Asp Thr Phe Tyr Ile Lys Asp Pro Leu Thr Ala
275   280   285

Glu Leu Pro Asp Asp Lys Thr Tyr Met Asp Asn Ile Lys Ala Val His
290   295   300

Glu Gln Gly Arg Phe Gly Ser Ile Gly Tyr Arg Tyr Asn Trp Lys Pro
305   310   315   320

Glu Glu Cys Gln Lys Leu Val Leu Arg Thr His Ser Thr Ala Ile Ser
325   330   335

Ala Arg Met Leu His Asp Leu Ala Lys Asp Pro Lys Pro Thr Arg Leu
340   345   350

Phe Ser Ile Asp Arg Val Phe Arg Asn Glu Ala Val Asp Ala Thr His
355   360   365

Leu Ala Glu Phe His Gln Val Glu Gly Val Leu Ala Asp Tyr Asn Ile
370   375   380

Thr Leu Gly Asp Leu Ile Lys Phe Met Glu Glu Phe Phe Glu Arg Met
385   390   395   400

Gly Val Thr Gly Leu Arg Phe Lys Pro Thr Tyr Asn Pro Tyr Thr Glu
405   410   415

Pro Ser Met Glu Ile Phe Ser Trp His Glu Gly Leu Gln Lys Trp Val
420   425   430

Glu Ile Gly Asn Ser Gly Met Phe Arg Pro Glu Met Leu Glu Ser Met
435   440   445

Gly Leu Pro Lys Asp Leu Arg Val Leu Gly Trp Gly Leu Ser Leu Glu
450   455   460

Arg Pro Thr Met Ile Lys Tyr Lys Val Gln Asn Ile Arg Glu Leu Leu
465   470   475   480

40

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Gly His Lys Val Ser Leu Asp Phe Ile Glu Thr Asn Pro Ala Ala Arg
            485                   490                   495


Leu Asp Glu Asp Leu Tyr Glu
            500


<210>  37
<211>  1440
<212>  PRT
<213>  Homo sapiens


<400>  37
Met Glu His Thr Glu Ile Asp His Trp Leu Glu Phe Ser Ala Thr Lys
1                   5                   10                  15

Leu Ser Ser Cys Asp Ser Phe Thr Ser Thr Ile Asn Glu Leu Asn His
            20                  25                  30

Cys Leu Ser Leu Arg Thr Tyr Leu Val Gly Asn Ser Leu Ser Leu Ala
            35                  40                  45

Asp Leu Cys Val Trp Ala Thr Leu Lys Gly Asn Ala Ala Trp Gln Glu
            50                  55                  60

Gln Leu Lys Gln Lys Lys Ala Pro Val His Val Lys Arg Trp Phe Gly
65                  70                  75                  80

Phe Leu Glu Ala Gln Gln Ala Phe Gln Ser Val Gly Thr Lys Trp Asp
            85                  90                  95

Val Ser Thr Thr Lys Ala Arg Val Ala Pro Glu Lys Lys Gln Asp Val
            100                 105                 110

Gly Lys Phe Val Glu Leu Pro Gly Ala Glu Met Gly Lys Val Thr Val
            115                 120                 125

Arg Phe Pro Pro Glu Ala Ser Gly Tyr Leu His Ile Gly His Ala Lys
            130                 135                 140

Ala Ala Leu Leu Asn Gln His Tyr Gln Val Asn Phe Lys Gly Lys Leu
145                 150                 155                 160

Ile Met Arg Phe Asp Asp Thr Asn Pro Glu Lys Glu Lys Glu Asp Phe
                165                 170                 175

Glu Lys Val Ile Leu Glu Asp Val Ala Met Leu His Ile Lys Pro Asp
            180                 185                 190

Gln Phe Thr Tyr Thr Ser Asp His Phe Glu Thr Ile Met Lys Tyr Ala
            195                 200                 205

Glu Lys Leu Ile Gln Glu Gly Lys Ala Tyr Val Asp Asp Thr Pro Ala
            210                 215                 220

Glu Gln Met Lys Ala Glu Arg Glu Gln Arg Ile Glu Ser Lys His Arg
225                 230                 235                 240

Lys Asn Pro Ile Glu Lys Asn Leu Gln Met Trp Glu Glu Met Lys Lys
                245                 250                 255
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41

Gly Ser Gln Phe Gly His Ser Cys Cys Leu Arg Ala Lys Ile Asp Met
260   265   270

Ser Ser Asn Asn Gly Cys Met Arg Asp Pro Thr Leu Tyr Arg Cys Lys
275   280   285

Ile Gln Pro His Pro Arg Thr Gly Asn Lys Tyr Asn Val Tyr Pro Thr
290   295   300

Tyr Asp Phe Ala Cys Pro Ile Val Asp Ser Ile Glu Gly Val Thr His
305   310   315   320

Ala Leu Arg Thr Thr Glu Tyr His Asp Arg Asp Glu Gln Phe Tyr Trp
325   330   335

Ile Ile Glu Ala Leu Gly Ile Arg Lys Pro Tyr Ile Trp Glu Tyr Ser
340   345   350

Arg Leu Asn Leu Asn Asn Thr Val Leu Ser Lys Arg Lys Leu Thr Trp
355   360   365

Phe Val Asn Glu Gly Leu Val Asp Gly Trp Asp Asp Pro Arg Phe Pro
370   375   380

Thr Val Arg Gly Val Leu Arg Arg Gly Met Thr Val Glu Gly Leu Lys
385   390   395   400

Gln Phe Ile Ala Ala Gln Gly Ser Ser Arg Ser Val Val Asn Met Glu
405   410   415

Trp Asp Lys Ile Trp Ala Phe Asn Lys Lys Val Ile Asp Pro Val Ala
420   425   430

Pro Arg Tyr Val Ala Leu Leu Lys Lys Glu Val Ile Pro Val Asn Val
435   440   445

Pro Glu Ala Gln Glu Glu Met Lys Glu Val Ala Lys His Pro Lys Asn
450   455   460

Pro Glu Val Gly Leu Lys Pro Val Trp Tyr Ser Pro Lys Val Phe Ile
465   470   475   480

Glu Gly Ala Asp Ala Glu Thr Phe Ser Glu Gly Glu Met Val Thr Phe
485   490   495

Ile Asn Trp Gly Asn Leu Asn Ile Thr Lys Ile His Lys Asn Ala Asp
500   505   510

Gly Lys Ile Ile Ser Leu Asp Ala Lys Phe Asn Leu Glu Asn Lys Asp
515   520   525

Tyr Lys Lys Thr Thr Lys Val Thr Trp Leu Ala Glu Thr Thr His Ala
530   535   540

Leu Pro Ile Pro Val Ile Cys Val Thr Tyr Glu His Leu Ile Thr Lys
545   550   555   560

Pro Val Leu Gly Lys Asp Glu Asp Phe Lys Gln Tyr Val Asn Lys Asn
565   570   575

42

Ser Lys His Glu Glu Leu Met Leu Gly Asp Pro Cys Leu Lys Asp Leu
580   585   590

Lys Lys Gly Asp Ile Ile Gln Leu Gln Arg Arg Gly Phe Phe Ile Cys
595   600   605

Asp Gln Pro Tyr Glu Pro Val Ser Pro Tyr Ser Cys Lys Glu Ala Pro
610   615   620

Cys Val Leu Ile Tyr Ile Pro Asp Gly His Thr Lys Glu Met Pro Thr
625   630   635   640

Ser Gly Ser Lys Glu Lys Thr Lys Val Glu Ala Thr Lys Asn Glu Thr
645   650   655

Ser Ala Pro Phe Lys Glu Arg Pro Thr Pro Ser Leu Asn Asn Asn Cys
660   665   670

Thr Thr Ser Glu Asp Ser Leu Val Leu Tyr Asn Arg Val Ala Val Gln
675   680   685

Gly Asp Val Val Arg Glu Leu Lys Ala Lys Lys Ala Pro Lys Glu Asp
690   695   700

Val Asp Ala Ala Val Lys Gln Leu Leu Ser Leu Lys Ala Glu Tyr Lys
705   710   715   720

Glu Lys Thr Gly Gln Glu Tyr Lys Pro Gly Asn Pro Pro Ala Glu Ile
725   730   735

Gly Gln Asn Ile Ser Ser Asn Ser Ser Ala Ser Ile Leu Glu Ser Lys
740   745   750

Ser Leu Tyr Asp Glu Val Ala Ala Gln Gly Glu Val Val Arg Lys Leu
755   760   765

Lys Ala Glu Lys Ser Pro Lys Ala Lys Ile Asn Glu Ala Val Glu Cys
770   775   780

Leu Leu Ser Leu Lys Ala Gln Tyr Lys Glu Lys Thr Gly Lys Glu Tyr
785   790   795   800

Ile Pro Gly Gln Pro Pro Leu Ser Gln Ser Ser Asp Ser Ser Pro Thr
805   810   815

Arg Asn Ser Glu Pro Ala Gly Leu Glu Thr Pro Glu Ala Lys Val Leu
820   825   830

Phe Asp Lys Val Ala Ser Gln Gly Glu Val Val Arg Lys Leu Lys Thr
835   840   845

Glu Lys Ala Pro Lys Asp Gln Val Asp Ile Ala Val Gln Glu Leu Leu
850   855   860

Gln Leu Lys Ala Gln Tyr Lys Ser Leu Ile Gly Val Glu Tyr Lys Pro
865   870   875   880

Val Ser Ala Thr Gly Ala Glu Asp Lys Asp Lys Lys Lys Lys Glu Lys
885   890   895

43

Glu Asn Lys Ser Glu Lys Gln Asn Lys Pro Gln Lys Gln Asn Asp Gly
900   905   910

Gln Arg Lys Asp Pro Ser Lys Asn Gln Gly Gly Gly Leu Ser Ser Ser
915   920   925

Gly Ala Gly Glu Gly Gln Gly Pro Lys Lys Gln Thr Arg Leu Gly Leu
930   935   940

Glu Ala Lys Lys Glu Glu Asn Leu Ala Asp Trp Tyr Ser Gln Val Ile
945   950   955   960

Thr Lys Ser Glu Met Ile Glu Tyr His Asp Ile Ser Gly Cys Tyr Ile
965   970   975

Leu Arg Pro Trp Ala Tyr Ala Ile Trp Glu Ala Ile Lys Asp Phe Phe
980   985   990

Asp Ala Glu Ile Lys Lys Leu Gly Val Glu Asn Cys Tyr Phe Pro Met
995   1000   1005

Phe Val Ser Gln Ser Ala Leu Glu Lys Glu Lys Thr His Val Ala Asp
1010   1015   1020

Phe Ala Pro Glu Val Ala Trp Val Thr Arg Ser Gly Lys Thr Glu Leu
1025   1030   1035   1040

Ala Glu Pro Ile Ala Ile Arg Pro Thr Ser Glu Thr Val Met Tyr Pro
1045   1050   1055

Ala Tyr Ala Lys Trp Val Gln Ser His Arg Asp Leu Pro Ile Lys Leu
1060   1065   1070

Asn Gln Trp Cys Asn Val Val Arg Trp Glu Phe Lys His Pro Gln Pro
1075   1080   1085

Phe Leu Arg Thr Arg Glu Phe Leu Trp Gln Glu Gly His Ser Ala Phe
1090   1095   1100

Ala Thr Met Glu Glu Ala Ala Glu Glu Val Leu Gln Ile Leu Asp Leu
1105   1110   1115   1120

Tyr Ala Gln Val Tyr Glu Glu Leu Leu Ala Ile Pro Val Val Lys Gly
1125   1130   1135

Arg Lys Thr Glu Lys Glu Lys Phe Ala Gly Gly Asp Tyr Thr Thr Thr
1140   1145   1150

Ile Glu Ala Phe Ile Ser Ala Ser Gly Arg Ala Ile Gln Gly Gly Thr
1155   1160   1165

Ser His His Leu Gly Gln Asn Phe Ser Lys Met Phe Glu Ile Val Phe
1170   1175   1180

Glu Asp Pro Lys Ile Pro Gly Glu Lys Gln Phe Ala Tyr Gln Asn Ser
1185   1190   1195   1200

Trp Gly Leu Thr Thr Arg Thr Ile Gly Val Met Thr Met Val His Gly
1205   1210   1215

44

Asp Asn Met Gly Leu Val Leu Pro Pro Arg Val Ala Cys Val Gln Val
1220   1225   1230

Val Ile Ile Pro Cys Gly Ile Thr Asn Ala Leu Ser Glu Glu Asp Lys
        1235   1240   1245

Glu Ala Leu Ile Ala Lys Cys Asn Asp Tyr Arg Arg Arg Leu Leu Ser
1250   1255   1260

Val Asn Ile Arg Val Arg Ala Asp Leu Arg Asp Asn Tyr Ser Pro Gly
1265   1270   1275   1280

Trp Lys Phe Asn His Trp Glu Leu Lys Gly Val Pro Ile Arg Leu Glu
            1285   1290   1295

Val Gly Pro Arg Asp Met Lys Ser Cys Gln Phe Val Ala Val Arg Arg
        1300   1305   1310

Asp Thr Gly Glu Lys Leu Thr Val Ala Glu Asn Glu Ala Glu Thr Lys
        1315   1320   1325

Leu Gln Ala Ile Leu Glu Asp Ile Gln Val Thr Leu Phe Thr Arg Ala
        1330   1335   1340

Ser Glu Asp Leu Lys Thr His Met Val Val Ala Asn Thr Met Glu Asp
1345   1350   1355   1360

Phe Gln Lys Ile Leu Asp Ser Gly Lys Ile Val Gln Ile Pro Phe Cys
            1365   1370   1375

Gly Glu Ile Asp Cys Glu Asp Trp Ile Lys Lys Thr Thr Ala Arg Asp
        1380   1385   1390

Gln Asp Leu Glu Pro Gly Ala Pro Ser Met Gly Ala Lys Ser Leu Cys
        1395   1400   1405

Ile Pro Phe Lys Pro Leu Cys Glu Leu Gln Pro Gly Ala Lys Cys Val
    1410   1415   1420

Cys Gly Lys Asn Pro Ala Lys Tyr Tyr Thr Leu Phe Gly Arg Ser Tyr
1425   1430   1435   1440